

**Crystal Clear Sound** 

**OPERATING INSTRUCTIONS** 

4000 WATTS PMPO CLASS-T DIGITAL CAR AUDIO AMPLIFIER WITH VARIABLE HIGH & LOW PASS FILTERS



# \*\*\*WARNING \*\*\*

1. TO PREVENT DESTRUCTION OF SPEAKERS, USE ONLY SUITABLY RATED SPEAKERS. (300WRMS NOMINAL 4 OHM PER CHANNEL; OR 600WRMS NOMINAL 4 OHM IN BRIDGE MODE)

2. CONTINUOUS EXPOSURE TO SOUND LEVELS OVER 80DB CAN CAUSE PERMANENT DAMAGE TO YOUR HEARING.

(THIS AMPLIFIER USED IN A CAR ENVIRONMENT, CAN PRODUCE SOUND LEVELS IN EXCESS OF 120DB!!!)

## **FEATURES**

- 1000 WATTS RMS (4000 WATTS PEAK MUSIC POWER OUTPUT)
- PWM MOSFET Power Supply
- GENUINE HEXFET POWER MOSFET TRANSISTOR OUTPUT STAGES
- CLASS-T TECHNOLOGY FOR SUPERIOR PERFORMANCE & HIGHER EFFICIENCY
- > 2 OHM STABLE OPERATION
- TRI-MODE OPERATION FOR SIMULTANEOUS CONNECTION OF TWO STEREO CHANNELS AND SUB-WOOFER
- > AUTOMATIC REMOTE ON/OFF SWITCHING

- SOFT-START DELAY TURN-ON CIRCUIT
- Power Status, Overload & Mute LED Indicators
- BUILT-IN VARIABLE CROSSOVER FRONT: HI-PASS (200Hz -1000Hz)
- BUILT-IN VARIABLE CROSSOVER REAR: LO-PASS (60Hz -220Hz)
- Built-In Overload & Over-Current Protection
- Built-In Overheat Protection
- BUILT-IN SPEAKER TEST TONES FOR CORRECT SPEAKER POSITIONING
- BUILT-IN MUTE BUTTON FOR ALL CHANNEL MUTE AND VOLUME SETUP
- Gold-Plated Speaker Terminals INPUT CONNECTIONS & CONTROLS



THIS AMPLIFIER ACCEPTS LOW LEVEL LINE OR PREAMP SIGNALS TAKEN FROM THE OUTPUT OF THE HEAD UNIT OR OTHER SIGNAL PROCESSOR UNIT. THESE ARE CONNECTED WITH RCA CABLES TO THE INPUT OF THE AMPLIFIER. IF THE HEAD UNIT ONLY HAS 2 LINE RCA OUTPUTS, THEN TWO CHANNEL SPLITTER RCA CABLES MUST BE USED TO CONNECT ALL 4 INPUTS OF THE AMPLIFIER.

- > INPUT ADJUSTABLE FROM 200MV UP TO 6V PEAK TO PEAK WITH THE LEVEL POT
- > LIMIT LED'S LIGHT UP WHEN THE INPUT LEVEL REACHES CLIPPING POINT
- > FILTER CROSSOVER FREQUENCY ADJUSTMENT MADE WITH CUTOFF FREQ POT
- > FILTER CAN BE SWITCHED ON OR OFF WITH HPF AND LPF SWITCHES
- > MUTE BUTTON FOR MUTING ALL OUTPUT CHANNELS (MUTE LED'S ON). PRESS MUTE BUTTON AGAIN TO REMOVE MUTE STATE FOR NORMAL OPERATION (MUTE LED'S OFF)
- SPEAKER TEST BUTTON FOR TEST TONE CYCLE. SENDS A 2 SECOND TEST TONE TO EACH SPEAKER IN SEQUENCE FOR CORRECT SPEAKER POSITIONING, AND SPEAKER PRESENCE TEST

### **POWER & SPEAKER CONNECTIONS**



- NB DISCONNECT THE GROUND OR NEGATIVE BATTERY TERMINAL BEFORE MAKING ANY CONNECTIONS.
- > Two Batteries, connected in parallel, may be used for more Output Power.
- Use only good quality connection cables to ensure high performance and maximum power output.
- Use 8mm<sup>2</sup> or larger automotive grade cable that can handle 120A rms currents. The cables should preferably be abrasion and heat resistant for safeguarding against potential fire hazards.

Take care to connect the speakers with the correct polarity. Depending on the acoustics of the vehicle, the Subwoofer connections may be reversed / swapped in order to achieve the desired Bass Response.



#### **INSTALLATION & SETUP INSTRUCTIONS**

- 1. UNPACK THE UNIT AND CHECK FOR ANY DAMAGE.
- 2. DISCONNECT THE GROUND OR NEGATIVE BATTERY TERMINAL.
- 3. CONNECT THE REMOTE WIRE FROM THE RADIO TO THE TERMINAL MARKED RMT ON THE AMP.
- 4. CONNECT THE LINE / PREAMP OUTPUT SIGNAL FROM THE RADIO OR SIGNAL PROCESSOR TO THE AMPLIFIER WITH RCA CABLES, AS SHOWN IN THE PREVIOUS EXAMPLE. *DO NOT YET PLUG THE RCA'S INTO THE AMPLIFIER!*
- 5. CONNECT THE SPEAKERS AND / OR SUBWOOFER AS PER THE EXAMPLES SHOWN BELOW.
- CONNECT THE POS TERMINAL TO THE BATTERY USING THE RECOMMENDED CABLE TYPE. AN EXTRA PROTECTION FUSE RATED AT ABOUT 100A CAN ALSO BE CONNECTED IN THE POSITIVE WIRE AT THE BATTERY TERMINAL IN THE ENGINE COMPARTMENT.
- 7. CONNECT THE GND TERMINAL TO A SUITABLE POINT ON THE CHASSIS OF THE VEHICLE. ENSURE THAT THE PAINT IS REMOVED.
- 8. SET THE INPUT LEVELS ON THE AMPLIFIER TO MINIMUM (FULLY ANTI-CLOCKWISE = 6V). SWITCH OFF THE HPF & LPF FILTERS.
- 9. RE-CONNECT THE BATTERY GROUND OR NEGATIVE TERMINAL.
- 10. SWITCH THE RADIO ON AND CHECK THAT THE AMPLIFIER ALSO SWITCHES ON.
- 11.PRESS THE SPEAKER TEST BUTTON. A TEST TONE SHOULD BE HEARD FROM EACH SPEAKER IN THE FOLLOWING SEQUENCE – FRONT RIGHT – REAR RIGHT – REAR LEFT – FRONT LEFT. IF NOT, CHECK THAT THE SPEAKERS ARE CONNECTED TO THE CORRECT AMPLIFIER OUTPUTS.
- 12.SWITCH THE RADIO OFF. PLUG THE RCA'S INTO THE AMPLIFIER NOW, AND SWITCH THE RADIO ON AGAIN.
- 13.SET THE RADIO VOLUME TO A LOW SETTING, AND SELECT A GOOD QUALITY RADIO STATION, OR PLAY A GOOD QUALITY CD.
- 14. PRESS THE AMPLIFIER MUTE BUTTON THE MUTE LED'S MUST COME ON TO INDICATE THE MUTE STATE.
- 15. Adjust the radio volume control to  ${\sim}75\%$  of the maximum volume level setting.
- 16.ON THE AMPLIFIER, TURN BOTH LEVEL POTS CLOCKWISE UNTIL THE LIMIT LED'S BEGIN TO LIGHT UP (START OF CLIPPING).
- 17. THE AMPLIFIER SHOULD NOW BE CORRECTLY SET UP. REDUCE THE RADIO VOLUME TO A LOW SETTING AGAIN.
- 18. PRESS THE MUTE BUTTON ON THE AMPLIFIER AGAIN TO REMOVE THE MUTE STATE.
- 19.SELECT & ADJUST THE LPF & HPF FILTERS ON THE AMPLIFIER AS DESIRED. ADJUST THE RADIO VOLUME TO THE DESIRED LEVEL.
- 20.GO OUT & PLAY!!! (TAKE CARE NOT TO DAMAGE YOUR EARS OR UNNECESSARILY DISTURB OTHERS!!!)

#### SPEAKER WIRING DIAGRAM – 2 CHANNEL BRIDGE



EXAMPLE FOR CONNECTION OF TWO SUBWOOFERS. EACH SPEAKER IN THE ABOVE PICTURE CAN ALSO BE ONE VOICE COIL IN A DUAL VOICE COIL (DVC) SUB.

#### **SPEAKER WIRING DIAGRAM – 3 CHANNEL**



EXAMPLE FOR CONNECTION OF ONE SUBWOOFER AND TWO 6X9'S / SPLITS.

#### **SPEAKER WIRING DIAGRAM – 4 CHANNEL STEREO**



EXAMPLE FOR CONNECTION OF FOUR 6x9'S / SPLITS. N.B. EACH SPEAKER CAN ALSO BE ONE VOICE COIL IN A DUAL VOICE COIL (DVC) SUB.

#### TROUBLESHOOTING

PROBLEM	CAUSE
Power LED OFF - Amp not switching on	CHECK POWER CONNECTIONS, AND REMOTE FROM
	RADIO

Power LED OFF - Amp not switching on	CHECK IF FUSES ARE BLOWN. REPLACE FUSES (REMOVE TOP COVER!)
Power LED FLASHING ONCE	BATTERY VOLTAGE TOO LOW - NEED TO RECHARGE BATTERY
Power LED FLASHING TWICE	AMP TOO HOT - ALLOW TO COOL DOWN
MUTE LED ON	MUTE BUTTON PRESSED. PRESS AGAIN TO REMOVE MUTE STATE.
MUTE LED ON	SPEAKER WIRES SHORTED. CHECK WIRING.

### **SPECIFICATIONS**

MAXIMUM PEAK POWER OUTPUT	4000 WATTS PEAK MUSIC POWER OUTPUT
Power Output @ 4 Ohms Stereo	4 x 250 WATTS RMS (4 x 1000 WATTS PMPO)
Power Output @ 4 Ohm Bridged	2 x 500 WATTS RMS (2 x 2000 WATTS PMPO)
Power Output @ 2 Ohms Stereo	4 x 250 WATTS RMS (4 x 1000 WATTS PMPO)
SOUND QUALITY	0,1% THD+N @ 4 x 250WRMS 4 Онм
EFFICIENCY	>90% @ 100W
LOW PASS FILTER	60Hz – 220Hz
HIGH PASS FILTER	200Hz – 1000Hz
FREQUENCY RESPONSE	10Hz – 20,000 Hz
SIGNAL TO NOISE RATIO	100pB
CHANNEL SEPARATION	>65dB from 20Hz-20kHz
INPUT SENSITIVITY	200мV – 6Vр-р
INPUT IMPEDANCE	22кОнм
OPERATIONAL VOLTAGE	10.5V – 14.4V DC
SPEAKER IMPEDANCE IN STEREO MODE	4 Онм
FUSE RATING	120A (30A x 4)
DIMENSIONS (WHD) MM	325 x 43 x 200

#### **NOTE:** SPECIFICATION<sup>|</sup> AND DESIGN SUBJECT TO CHANGE WITHOUT NOTICE FOR IMPROVEMENTS.

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